What Is Claimed Is:

1. A process for reading fractions of an interval between contiguous photo-sensitive elements in a linear optical sensor, of a type used in a goniometer, in which an angle measured is an angle formed with a reference axis of the goniometer, perpendicular to the linear optical sensor, by a light beam which is trained on the optical sensor by an optical device, comprising:

reading a current image constituted by an ordered totality of intensities of incident radiations read on contiguous photosensitive elements; and

processing data taken from the current image by means of an interpolation process which converges towards a result defining, with respect to an origin determined by an intersection of the reference axis with an axis of the sensor, a distance d of a point of incidence on the sensor of an ideal optical axis of the light beam.

2. The process of claim 1, wherein the distance is determined by means of an interpolation process on a measurement of distance based on a comparison of the current image with an image previously acquired which is compared with the current image using a suitable measurement system.

3. The process of claim 2, wherein T_i, $i=1, \ldots, n$, is the totality of photosensitive elements forming a template, and I_i, $i=1, \ldots, m$, $m>n$, is the totality of photosensitive elements forming the current image, a possible measurement formula is the sum of the distances element by element where the distance can be the Euclidean distance, the distance of the absolute value or other; the distance in element k being:

$$S_k = \sqrt{\sum_i (I_i - T_{i-k})^2}$$

with Euclidean measurements; or

$$S_k = \sum_i \left| I_i - T_{i-k} \right|$$

using absolute measurement values; the fraction of interval between two contiguous photosensitive elements being determined using an interpolation obtained considering the local minimum of the interval k+1, k-1 in the curve passing through the distances corresponding to elements k, k+1, k-1, i.e. the fraction of interval being determinable using the ratio:

$$f = \frac{d_{k+1} - d_{k-1}}{2(d_{k+1} - 2d_k + d_{k-1})}$$

where f represents the fractional part of the position of the point of incidence of the ideal optical axis of the light beam.

4. The process of claim 2, wherein T_i, $i=1, \ldots,$ n, is the totality of photosensitive elements forming a template, and I_i, $i=1, \ldots, m$, $m>n$, is the totality of photosensitive elements forming the current image, a possible measurement formula is the correlation i.e. the sum of the products element by element between the current image and the pattern determined in calibration with the standard ratio:

$$S_k = \sum_i (I_i \cdot T_{i-k})$$

and, normalised:

$$S_k = \frac{\sum_i (I_i \cdot T_{i-k})}{\sqrt{\sum_i I_i^2}}$$

where the fraction of interval between two contiguous photosensitive elements is determined using an interpolation obtained considering the local minimum of the interval k+1, k-1 in the curve passing through the distances corresponding to elements k, k+1, k-1, i.e. the fraction of interval being determinable using the ratio:

$$f = \frac{d_{k+1} - d_{k-1}}{2(d_{k+1} - 2d_k + d_{k-1}}$$

where f represents the fractional part of the position of the point of incidence of the ideal optical axis of the light beam.

5. The process of claim 1, wherein the distance is determined by means of a process of interpolation on the current image.

6. The process of claim 1, wherein the distance is determined by means of a process of interpolation of a template.

7. The process of claim 1, wherein the distance is determined by means of a calculation of symmetries in the current image, or of some details of the image, by determining a position of a centre of symmetry or a centre of mass; the determination being made by means of expressions of the following type:

$$p = \frac{\sum_i i \cdot I_i}{\sum_i I_i}$$

where p is the position of the centre of mass relating to the current image.